Claims

1. Device (10) for maintaining the position of a rotatably or displaceably mounted shaft (11) having a surface (44), particularly an armature shaft (11) of an electric motor (9), wherein a gripping body (26) is arranged around the shaft (11), and said gripping body is impinged upon by a force (54, 56) in order to form a friction closure between the gripping body (26) and the surface (44) of the shaft (11), characterized in that the force (54, 56) for maintaining the position is provided by an actively actuated control member (30, 62, 70, 80) that is connected at least to one end (38, 40, 74) of the gripping body (26).

2. Device (10) according to Claim 1, characterized in that the gripping body (26) is embodied as a wrap-around band (72) or helical spring (48) with at least two ends (38, 40, 74).

3. Device (10) according to one of Claims 1 or 2, characterized in that the gripping body (26) and/or the surface (44) of the shaft (11) features a material (78) with an increased coefficient of adhesive friction, in particular a rubber-like casing (76).

4. Device (10) according to one of the preceding claims, characterized in that the gripping body (26) is embodied as a double wrap-around band (72) with two free ends (38, 40) and a loop (74) as a third end (74).

5. Device (10) according to Claim 4, characterized in that the two free ends (38, 40) are arranged axially within the loop (74) of the third end (74).

6. Device (10) according to one of the preceding claims, characterized in that the gripping body (26) is fabricated of round wire (50) or a flat band (64).

7. Device (10) according to one of the preceding claims, characterized in that the control member (30, 62, 70, 80) is actuated by a disengaging system (32), which has an electric or pneumatic or hydraulic drive (81) with a lifting magnet (34) or a chemical or shape-memory actuator (68).

8. Device (10) according to one of the preceding claims, characterized in that the disengaging system (32) has a double lift with two control members (30, 62, 70, 80), which simultaneously deflect — particular symmetrically — at least two ends (38, 40, 74) of the gripping body (26).

9. Device (10) according to one of the preceding claims, characterized in that at least one control member (30) is embodied as a wedge (62) or an eccentric wheel (70), which deflects at least one end (38, 40, 74) of the gripping body (26).

10. Device (10) according to one of the preceding claims, characterized in that at least one control member (30, 62, 70, 80) executes a linear movement or a rotational movement — particularly a rotation on the shaft (11) — to deflect the at least one end (38, 40, 74).

11. Device (10) according to one of the preceding claims, characterized in that the friction closure is caused by pulling tight the gripping body (26) by means of the effect of a tensile force (56) or a compressive force (54) on the ends (38, 40, 74).

12. Device (10) according to one of the preceding claims, characterized in that at least one end (38, 40, 74) of the gripping body (26) is fastened on a housing part (18, 20, 22, 24) of the shaft bearing (16).

13. Device (10) according to one of the preceding claims, characterized in that the disengaging system (32) features a restoring element (46), which is arranged in such a way that when the disengaging system (32) is activated (energized) a friction closure between the surface (44) and the gripping body (26) is prevented.

14. Device (10) according to one of the preceding claims, characterized in that the restoring element is arranged in such a way that when the disengaging system (32) is activated (energized) a friction closure between the surface (44) and the gripping body (26) is produced.

15. Device (10) according to one of the preceding claims, characterized in that two disengaging systems (32) — particularly two electric lifting magnets (34) — are arranged next to each other axial to the shaft (11), or in a radial plane.

16. Device (10) according to one of the preceding claims, characterized in that the at least two ends (38, 40, 74) are impinged upon in such a way by the force (54, 56) in order to form the friction closure, that a resulting radial force (58) is generated, which twists the shaft (11) against a bearing point (16) of the shaft (11), whereby the shaft (11) is prevented from rotating by means of an additional holding moment.

17. Device (10) according to one of the preceding claims, characterized in that the gripping body (26) is surrounded radially at least partially by at least one additional gripping body (27).

18. Device (10) according to one of the preceding claims, characterized in that the gripping bodies (26, 27) have opposite winding directions and at least one end (86, 88) beginning the winding is connected to at least one end (87, 89) ending the winding by means of the control member (30) and the disengaging system (32).